162737

STIC EIC 2100
Search Request Form

Today's Date: 8/17/05	**What date would you like to use to limit the search?** Priority Date: 5/24/2001 Other:

Name _Leslie Wong_

AU _2167_   Examiner # _78953_

Room # _3B09_   Phone _2-4120_

Serial # _09/864,719_

Format for Search Results (Circle One):

PAPER   DISK   EMAIL

Where have you searched so far?

USP   DWPI   EPO   JPO   ACM   IBM TDB

IEEE   INSPEC   SPI   Other _____

Is this a "Fast & Focused" Search Request? (Circle One) (YES)   NO

A "Fast & Focused" Search is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2100 and on the EIC2100 NPL Web Page at http://ptoweb/patents/stic/stic-tc2100.htm.

What is the topic, novelty, motivation, utility, or other specific details defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, definitions, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract, background, brief summary, pertinent claims and any citations of relevant art you have found.

Topic: Diagnosing data problems in database

Novelty: Using the SQL Commands "With" and "Outer Join" in preparing the test queries.

See attached East Search History.

STIC Searcher _Geoffrey St-Leger_ Phone _93540_	
Date picked up _8/17/5_ Date Completed _8/17/5_	

sira
Search and Information
Resource Administration

Set	Items	Description
S1	1307	SQL OR STRUCTURED()QUERY()LANGUAGE
S2	608	OUTER()JOIN? ?
S3	8	S1 AND S2 AND WITH
S4	331	S2 AND WITH
S5	14	S4 AND IC=G06F
S6	10	S4 AND DATABASE? ?
S7	14	S5:S6
S8	14	S3 OR S7

8/5/1   (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

014876361   **Image available**
WPI Acc No: 2002-697067/200275
XRPX Acc No: N02-549556
  Query processing method in database **system, involves transforming**
  original query into transformed query by including predicate of outer
  join operation into view such that transformed query is equivalent to
  original query
Patent Assignee: ORACLE CORP (ORAC-N)
Inventor: WITKOWSKI A
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week
US 6438541   B1   20020820 US 99246722   A   19990209 200275 B

Priority Applications (No Type Date): US 99246722 A 19990209
Patent Details:
Patent No   Kind Lan Pg   Main IPC   Filing Notes
US 6438541   B1   12 G06F-017/30

Abstract (Basic): US 6438541 B1
        NOVELTY - An original query containing an **outer** **join** operation
   of a view formed **with** a **database** object, is converted into a
   transformed query by including a predicate of the **outer** **join**
   operation into the view such that the transformed query is equivalent
   to the original query.
        DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for
   computer-readable medium storing query processing program.
        USE - For query processing in computer **database** system.
        ADVANTAGE - Processes queries **with** outer joined views efficiently
   by performing excellent index scans. Avoids performing full table scan
   operation by reducing the portion of tables joined in view for a
   scanning operation. Restricts the view tables to acquire a more
   efficient access path. Processes queries involving outer joined views,
   to reduce query response time. Estimates cost for original and
   transformed queries to select efficiently performing query.
        DESCRIPTION OF DRAWING(S) - The figure shows the flowchart
   explaining the query processing operation.
        pp; 12 DwgNo 3/4
Title Terms: QUERY; PROCESS; METHOD; **DATABASE** ; SYSTEM; TRANSFORM;
   ORIGINAL; QUERY; TRANSFORM; QUERY; OUTER; JOIN; OPERATE; VIEW; TRANSFORM;
   QUERY; EQUIVALENT; ORIGINAL; QUERY .
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

 8/5/2   (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

013575313   **Image available**
WPI Acc No: 2001-059520/200107
XRPX Acc No: N01-044405
  Incremental refresh performing method for materialized view in database
  management systems, involves deleting rows, that are attained by
  combining specific rows with **changed rows of selected table**
Patent Assignee: ORACLE CORP (ORAC-N)
Inventor: DIAS K; WITKOWSKI A
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week

US 6125360   A   20000926 US 98109115   A   19980702 200107 B

Priority Applications (No Type Date): US 98109115 A 19980702
Patent Details:
Patent No Kind Lan Pg   Main IPC   Filing Notes
US 6125360   A   24 G06F-017/30

Abstract (Basic): US 6125360 A
    NOVELTY - The base table of materialized view is established as
selected table. The row (Tj) which is processed, is combined **with**
both changed and unchanged rows of selected table. The rows that are
attached due to combining of changed rows of selected table **with** Tj
in materialized view is deleted, and the rows in which Tj combines
with unchanged rows of selected table is left.
    DETAILED DESCRIPTION - The base table of a materialized view is
established as a selected table. If the selected table is the right
table of **outer   join** , the materialized view is updated to reflect
deletions to selected table by processing each row (Tj), that combines
with changed row of selected table. If Tj combines in materialized
view **with** changed rows of selected table, then the rows containing Tj
in materialized view is removed and replaced **with** a row in which
selected columns are set to NULL. INDEPENDENT CLAIMS are also included
for the following:
    (a) **database** system;
    (b) incremental refresh program
    .USE - For maintenance of materialized views that contain one-to-N
lossless joins in **database** management system.
    ADVANTAGE - Since the incremental refresh technique does not
require information about the order of updates to the base tables, the
overhead associated **with** maintaining sequencing information is
avoided. Since the technique is idempotent in performing an incremental
refresh N-times on the same data, after a system crash, the incremental
refresh operation is restarted from the beginning without taking into
account how far the operation had progressed prior to the crash.
    DESCRIPTION OF DRAWING(S) - The figure shows the flowchart that
illustrates the incremental refresh operation.
    pp; 24 DwgNo 5/7
Title Terms: INCREMENT; REFRESH; PERFORMANCE; METHOD; VIEW; **DATABASE** ;
  MANAGEMENT; SYSTEM; DELETE; ROW; ATTAIN; COMBINATION; SPECIFIC; ROW;
  CHANGE; ROW; SELECT; TABLE
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

 8/5/3   (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

012765394   **Image available**
WPI Acc No: 1999-571522/199948
XRPX Acc No: N99-421166
  Full outer   join **specification method using** SQL   **for relational**
  database **management system**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: CHENG J M; LEUNG T Y; PIRAHESH M H
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week
US 5963933   A   19991005 US 97882027   A   19970625 199948 B

Priority Applications (No Type Date): US 97882027 A 19970625
Patent Details:
Patent No Kind Lan Pg   Main IPC   Filing Notes
US 5963933   A   18 G06F-017/30

Abstract (Basic): US 5963933 A
        NOVELTY - The tuples of two tables are joined by union of a left
    outer   join   with a right **outer   join** lesser than matched tuples
    from right **outer   join** , using a full **outer   join** . The join
    condition is free from restrictions of type of join conditions
    specified.
        DETAILED DESCRIPTION - A data processor stores data in the form of
    two tables each defining an operand, which is retrievable by query
    language. The join condition is selected from the set of comparison
    operators like IS NULL, LIKE, EQUALS, DOES NOT EQUAL, IS GREATER THAN,
    IS LESS THAN, IS GREATER THAN OR EQUAL TO, IS LESSER THAN OR EQUAL TO.
    The comparison operators are combined **with** logical operators such as
    AND, OR, and NOT. An INDEPENDENT CLAIM is also included for a full
    outer   join specification apparatus.
        USE - For relational **database** management system.
        ADVANTAGE - The method enables the use of a modified merge join to
    implement full **outer   join** which enables the use of arbitrary join
    conditions other than the equality predicate. A full **outer   join** is
    implemented **with** any join condition without any new runtime
    operators.
        DESCRIPTION OF DRAWING(S) - The figure shows flow chart of
    implementing full **outer   join   with** any join condition.
        pp; 18 DwgNo 4/7
Title Terms: FULL; OUTER; JOIN; SPECIFICATION; METHOD; **SQL** ; RELATED;
    DATABASE ; MANAGEMENT; SYSTEM
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

8/5/4   (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

012437398   **Image available**
WPI Acc No: 1999-243506/199920
Related WPI Acc No: 1997-424533; 1998-041605
XRPX Acc No: N99-181243
    **Expression keyset identification method for generating unique properties
    of intermediate query sub-expressions**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BHARGAVA G; GOEL P; IYER B R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5890148	A	19990330	US 94366560	A	19941230	199920	B
			US 95460561	A	19950602		
			US 97986791	A	19971208		

Priority Applications (No Type Date): US 94366560 A 19941230; US 95460561 A
    19950602; US 97986791 A 19971208
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5890148	A		24	G06F-017/30	Div ex application US 94366560
					Cont of application US 95460561
					Div ex patent US 5659728
					Cont of patent US 5696960

Abstract (Basic): US 5890148 A
        NOVELTY - A set (S3) is generated and defined as a keyset (R) if
    binary operator is right **outer - join** , predicate is equi- join and
    attributes common to schema of both predicate and left portion which
    are in keyset (L), otherwise the set (S3) is defined as an empty set.
        DETAILED DESCRIPTION - The keyset (L) and keyset (R) are

identified. Each element in keyset (L) is concatenated **with** each
element in keyset (R) to generate a set (S1). A set (S2) is generated
and defined as a keyset (L) if binary operator is a left **outer - join**
, predicate is equi-join and attributes common to schema of both
predicate and right portion which are in keyset (R), otherwise the set
(S2) is defined as an empty set. The keyset (e) is defined as equal to
union of S1,S2 and S3 such that keyset (e)=S1US2US3. An INDEPENDENT
CLAIM is included for computer program product.
    USE - For generating unique properties of intermediate query
sub-expressions to optimize **SQL** query.
    ADVANTAGE - Determines unique properties of expression so that
queries containing **outer - join** operations can be optimized.
    DESCRIPTION OF DRAWING(S) - The figure shows operational flow
diagram of uniqueness processing.
    Set (S1-S3)
    Keyset (R,L)
    pp; 24 DwgNo 9/10
Title Terms: EXPRESS; IDENTIFY; METHOD; GENERATE; UNIQUE; PROPERTIES;
  INTERMEDIATE; QUERY; SUB; EXPRESS
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

  8/5/5   (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

012374209   **Image available**
WPI Acc No: 1999-180316/199915
Related WPI Acc No: 1998-120258; 1999-131663; 1999-561266
XRPX Acc No: N99-132469
  Reordering method of complex structured   query   language (SQL)
lqueries for database **management**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: GOEL P; IYER B R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5875447	A	19990223	US 96655300	A	19960530	199915	B
			US 97904517	A	19970801		

Priority Applications (No Type Date): US 96655300 A 19960530; US 97904517 A
  19970801
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5875447	A		19	G06F-017/30	Cont of application US 96655300
					Cont of patent US 5713015

Abstract (Basic): US 5875447 A
    NOVELTY - A query accepted into computer is simplified by replacing
first expression **with** a second expression.
    DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the
following:
    (a) an apparatus for simplifying query;
    (b) an article of manufacture comprising computer program carrier
for query simplification.
    USE - For reordering queries involving GROUPBYS, joins, **outer
joins** and full **outer joins** used in management of **database in**
electronic storage device.
    ADVANTAGE - Eliminates redundant sub-expressions and modifies
expensive binary operations to inexpensive binary operations, thereby
converting complex predicates to simple predicates.
    DESCRIPTION OF DRAWING(S) - The figure represents flowchart
illustrating method of optimizing **SQL** queries.
    pp; 19 DwgNo 4/6

Title Terms: METHOD; COMPLEX; STRUCTURE; QUERY; LANGUAGE; **SQL** ; QUERY;
    DATABASE ; MANAGEMENT
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

   8/5/6   (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

012289108   **Image available**
WPI Acc No: 1999-095214/199908
Related WPI Acc No: 1998-062623
XRPX Acc No: N99-069276
    SQL **query simplification method for** database **management system -
    involves replacing expression in query** with **another specific expression
    after inputting it to computer**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BHARGAVA G; GOEL P; IYER B R
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week
US 5855012   A   19981229 US 95373562   A   19950117 199908 B
                               US 97904414   A   19970731

Priority Applications (No Type Date): US 95373562 A 19950117; US 97904414 A
    19970731
Patent Details:
Patent No   Kind Lan Pg   Main IPC   Filing Notes
US 5855012   A   31 G06F-017/30   Cont of application US 95373562
                                      Cont of patent US 5701454

Abstract (Basic): US 5855012 A
        The method involves accepting the query in a computer. The
    expression in the query is replaced **with** another specific expression.
        USE - For main frame, minicomputer or PC.
        ADVANTAGE - Simplifies query by transforming **outer   join**
    operations to less expensive joins.
        Dwg.4/5
Title Terms: **SQL** ; QUERY; SIMPLIFY; METHOD; **DATABASE** ; MANAGEMENT; SYSTEM
    ; REPLACE; EXPRESS; QUERY; SPECIFIC; EXPRESS; AFTER; INPUT; COMPUTER
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

   8/5/7   (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

012151290   **Image available**
WPI Acc No: 1998-568202/199848
XRPX Acc No: N98-442090
    SQL **query processing method in relational** database **management system
    - involves converting** outer   **join operation created by decorrelation
    processing into correlated scalar derived table** with **COALESCE function**
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: JOU M M; LEUNG T Y; PIRAHESH M H
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week
US 5822750   A   19981013 US 97884868   A   19970630 199848 B

Priority Applications (No Type Date): US 97884868 A 19970630

Patent Details:
Patent No   Kind Lan Pg   Main IPC   Filing Notes
US 5822750   A   32 G06F-017/30

Abstract (Basic): US 5822750 A
        The method involves receiving a correlated subquery from user. A
    correlation processing is performed on the SQL statement and a
    decorrelated subquery is produced. The query processor checks whether
    any outer   join operation is created by the decorrelation process.
        When an outer   join operation is judged to be created, the
    correlation bindings in the outer   join operation is obtained from
    the correlation source. The created outer   join operation is
    converted into a correlated scalar derived table with a COALESCE
    function.
        ADVANTAGE - Optimises correlated derived table evaluation without
    accessing any base tables. Eliminates table access operations in
    evaluation of query. Increases efficiency. Eliminates join operation
    generated by decorrelation process thereby increasing operating
    efficiency of system.
        Dwg.10/19
Title Terms: SQL ; QUERY; PROCESS; METHOD; RELATED; DATABASE ; MANAGEMENT
  ; SYSTEM; CONVERT; OUTER; JOIN; OPERATE; PROCESS; CORRELATE; SCALE;
  DERIVATIVE; TABLE; COALESCE; FUNCTION
Index Terms/Additional Words: RDBMS
Derwent Class: T01
International Patent Class (Main): G06F-017/30
File Segment: EPI

  8/5/8   (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

011761981   **Image available**
WPI Acc No: 1998-178891/199816
Related WPI Acc No: 1997-526038; 1998-062624; 1998-297311; 1998-609847
XRPX Acc No: N98-141596
  Re-ordering complex SQL queries containing joins, outer and full outer
    joins - enumerating all required sets that identify constraints on
  associative re-orderings of relations using hyper-edges generated between
  nodes corresp to left outer   join , right outer   join , or full
  outer   join
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BHARGAVA G; GOEL P; IYER B R
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week
US 5724568   A   19980303   US 94326461   A   19941020 199816 B
                              US 95464268   A   19950605

Priority Applications (No Type Date): US 94326461 A 19941020; US 95464268 A
  19950605
Patent Details:
Patent No   Kind Lan Pg   Main IPC   Filing Notes
US 5724568   A   27 G06F-017/30   Div ex application US 94326461

Abstract (Basic): US 5724568 A
        The query is first translated into a hyper-graph representation.
    Required sets, conflict sets and preserved sets are then generated for
    the query hyper-graph. Using the required sets, plans are enumerated.
    The plans represent associative re-orderings of relations in the query.
     SQL operators are selectively assigned to each of the enumerated
    plans using the conflict sets and/or preserved sets, so that the
    results from the plans are identical to the original query.
        A novel Modified General Outer   Join (MGOJ) operator is assigned

to the root of a sub-tree. The MGOJ operator is a compensation
operator. The operator assignment is performed recursively for the root
of each sub-tree in the plan. One of the enumerated plans, generally
the most optimal, is then selected for execution.
    ADVANTAGE - Improved execution time **with** optimal ordering of **SQL**
    queries. Identifies and provides enhanced set of re-orderings for
    optimisation.
        Dwg.1/11
Title Terms: ORDER; COMPLEX; **SQL** ; QUERY; CONTAIN; JOIN; OUTER; FULL;
    OUTER; JOIN; REQUIRE; SET; IDENTIFY; CONSTRAIN; ASSOCIATE; RELATED; HYPER
    ; EDGE; GENERATE; NODE; CORRESPOND; LEFT; OUTER; JOIN; RIGHT; OUTER; JOIN
    ; FULL; OUTER; JOIN
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

 8/5/9   (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

011645715   **Image available**
WPI Acc No: 1998-062623/199806
Related WPI Acc No: 1999-095214
XRPX Acc No: N98-049325
    SQL **query simplification for relational** database **query system -**
    involves calculating strong predicate set to replace full, left or right
    outer joins with **transformation applied to query producing efficient**
    operations
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BHARGAVA G; GOEL P; IYER B R
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No Kind   Date   Week
US 5701454   A   19971223 US 95373562   A   19950117 199806 B

Priority Applications (No Type Date): US 95373562 A 19950117
Patent Details:
Patent No Kind Lan Pg   Main IPC   Filing Notes
US 5701454   A   29 G06F-017/30

Abstract (Basic): US 5701454 A
        The query simplification method involves calculating a strong set
    of predicates typically being a selection or join predicate which is
    null-intolerant. The strong set of attributes is used to select and
    replace a full, left, or right **outer** join operation found as the
    operand of an intersection operation in the query. A less expensive
    outer or inner join replaces the selected join and the process is
    repeated until no further simplification if possible.
        Inferences are propagated from one operand to the other of an
    intersection operation. Selection operators are applied through
    transitive closure to reduce the size of intermediate results. The
    transformations are applied to the query to produces a set of
    operations that perform more efficiently than that of the original
    query while providing the same results.
        ADVANTAGE - Simplification method works for queries involving
    (full) **outer** join operators, intersection operators and join
    operators.
        Dwg.4/5
Title Terms: **SQL** ; QUERY; SIMPLIFY; RELATED; **DATABASE** ; QUERY; SYSTEM;
    CALCULATE; STRONG; SET; REPLACE; FULL; LEFT; RIGHT; OUTER; JOIN;
    TRANSFORM; APPLY; QUERY; PRODUCE; EFFICIENCY; OPERATE
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

011549557   **Image available**
WPI Acc No: 1997-526038/199748
Related WPI Acc No: 1998-062624; 1998-178891; 1998-297311; 1998-609847
XRPX Acc No: N97-438446
    SQL query re-ordering method for RDBMS - involves generating sets
  containing real attributes with operators assigned to enumerated plans
  for query using conflict sets
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)
Inventor: BHARGAVA G; GOEL P; IYER B R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5680603	A	19971021	US 94326461	A	19941020	199748	B

Priority Applications (No Type Date): US 94326461 A 19941020
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5680603	A		29	G06F-017/30	

Abstract (Basic): US 5680603 A
      The SQL query reordering method involves generating one or more
  required sets (p) for the query Q in the memory of the computer. The
  required set (p) comprises V1, Vr , sch (p) is a set of real
  attributes, V1=sch (p) AND gate T1, and Vr=sch (p) AND gate Tr, so that
  the required set (p) contains relations that must be in T1 and Tr
  before T1 and Tr can be combined. One or more plans T are enumerated
  for the query Q using the required sets (p). The enumerated plans T
  represent associative re-orderings of relations in the query Q. T1 and
  Tr are combined to form T=T1. Tr provided that there are no common
  relations between T1 and Tr. A total number of relations in T1 and Tr
  is the same as a total number of relations in T.
      All relations in V1 are in T1 and all relations in Vr are in Tr
  when predicate p is associated with an outer join operation. A
  conflict set Cs for a first operator in the query Q is generated when a
  relation referenced in the predicate for the first operator is also
  referenced in a null-supplying side of a second operator in the query
  Q. Operators are selectively assigned to each of the enumerated plans T
  for the query Q using the conflict set Cs, so that the results from the
  plans T are identical to the query Q.
      ADVANTAGE - Optimises complex SQL join queries to improve
  execution time.
      Dwg.4/11
Title Terms: SQL ; QUERY; ORDER; METHOD; GENERATE; SET; CONTAIN; REAL;
  ATTRIBUTE; OPERATE; ASSIGN; PLAN; QUERY; CONFLICT; SET
Derwent Class: T01
International Patent Class (Main): G06F-017/30
File Segment: EPI

DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

011280633   **Image available**
WPI Acc No: 1997-258537/199723
XRPX Acc No: N97-213868
  Computer system for creating and storing resultant database using
  ANSI-92 SOL2 outer join protocol - has second memory device which is
  coupled to central processing unit and has push-pop stack area and

storage area for nodes
Patent Assignee: DAVID M M (DAVI-I)
Inventor: DAVID M M
Number of Countries: 001   Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5625812	A	19970429	US 94339454	A	19941114	199723	B

Priority Applications (No Type Date): US 94339454 A 19941114
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5625812	A		10	G06F-017/30	

Abstract (Basic): US 5625812 A
     The system includes a central processing unit **with** a first memory
storage device containing at least a first normalised, relational
database . A second memory device coupled to the central processing
unit, has a push-pop stack area and a storage area for nodes.
     The first memory device has a set of instructions for controlling
the central processing unit to parse the **outer** **join** protocol
statement into a number of tokens for execution by the central
processing unit in accord **with** the grammar, syntax and semantics, of
ANSI-92 SQL2 **outer** **join** protocol for controlling the actions of the
central processing unit. The tokens from the **outer** **join** statement
are sequentially parsed to identify if the token being parsed is a
table name, join type (left or right), or a join condition.
     ADVANTAGE - Increases accuracy and efficiency of cental processing
units operation.
     Dwg.2/3
Title Terms: COMPUTER; SYSTEM; STORAGE; RESULT; **DATABASE** ; OUTER; JOIN;
  PROTOCOL; SECOND; MEMORY; DEVICE; COUPLE; CENTRAL; PROCESS; UNIT; PUSH;
  POP; STACK; AREA; STORAGE; AREA; NODE
Derwent Class: T01
International Patent Class (Main): **G06F-017/30**
File Segment: EPI

 8/5/12   (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

010408979   **Image available**
WPI Acc No: 1995-310325/199540
XRPX Acc No: N95-234268
  **Relational data base contg number of tables qualification performing -
  establishing range variable processing order, which resolves processing
  ambiguities both in ordering range variables and eliminates false roots**
Patent Assignee: HUGHES AIRCRAFT CO (HUGA)
Inventor: DEPREZ D
Number of Countries: 001   Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5423035	A	19950606	US 92996305	A	19921223	199540	B

Priority Applications (No Type Date): US 92996305 A 19921223
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5423035	A		13	G06F-017/30	

Abstract (Basic): US 5423035 A
     The method involves establishing a user query as to a set of
tables. followed by reducing the user query into component joins in the
form of f(A) join f(B), or constant join f(A), wherein f(A) represents
a function upon the fields of a table A and f(B) represents a function
upon the fields of a table B.

The method also entails establishing a processing order for the tables, which is selected so as to be consistent **with** that required by any **outer - joins** in the user query, e.g. the first in order table comprises the root. Further it includes evaluating each component join to produce respective pointer table indexes.

USE/ADVANTAGE - In computerised relational data base. Speed up qualification processing of data base that eliminates needs for user defined index.

Dwg.1/5

Title Terms: RELATED; DATA; BASE; CONTAIN; NUMBER; TABLE; QUALIFY; PERFORMANCE; ESTABLISH; RANGE; VARIABLE; PROCESS; ORDER; RESOLUTION; PROCESS; AMBIGUOUS; ORDER; RANGE; VARIABLE; ELIMINATE; FALSE; ROOT

Derwent Class: T01

International Patent. Class (Main): **G06F-017/30**

File Segment: EPI

8/5/13   (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

010277254   **Image available**
WPI Acc No: 1995-178509/199523
XRPX Acc No: N95-140209

Extending semantics of outer **join operator for un-nesting queries to relational** database **- converting inner query to first un-nested query by removing first predicate and modifying count aggregate function, and converting outer query to second un-nested query and modifying second predicate**

Patent Assignee: ORACLE CORP (ORAC-N)
Inventor: KRISHNA M M
Number of Countries: 001   Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5412804	A	19950502	US 92876393	A	19920430	199523	B

Priority Applications (No Type Date): US 92876393 A 19920430

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5412804	A		32	G06F-015/40	

Abstract (Basic): US 5412804 A

The semantics of the **outer join** operator are extended to permit the application of different predicates to the join tuples and the anti-join tuples. For un-nesting of nested query blocks, the anti-join tuples, for example, are associated **with** a count value of zero instead of a count value of null. An inner query block is un-nested from an outer query block by converting the inner query to a first un-nested query generating a temporary relation and converting the outer query block to a second un-nested query receiving the precomputed temporary relation.

When the nested inner query has an equi-join predicate joining a relation of the inner query to an outer query and a count aggregate, the query blocks are un-nested by removing the equi-join predicate from the inner query and placing a corresponding conjunctive (left) **outer - join** predicate term in the predicate of the outer query, performing the count aggregate for each distinct value of the joining attribute of the relation of the inner query, and in the outer query applying different predicates to the joining and anti-joining tuples such that the predicate of the anti-joining tuples is evaluated assuming a count value of zero.

ADVANTAGE - Efficient.

Dwg.9/22

Title Terms: EXTEND; OUTER; JOIN; OPERATE; NEST; QUERY; RELATED; **DATABASE**; CONVERT; INNER; QUERY; FIRST; NEST; QUERY; REMOVE; FIRST; MODIFIED;

COUNT; AGGREGATE; FUNCTION; CONVERT; OUTER; QUERY; SECOND; NEST; QUERY;
MODIFIED; SECOND
Derwent Class: T01
International Patent Class (Main): **G06F-015/40**
File Segment: EPI

8/5/14   (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

009375457   **Image available**
WPI Acc No: 1993-068935/199309
XRPX Acc No: N93-052911
   Data processing system for execution of outer   join operations -
   responds to values in selected set of columns of outer table, to
   determine number of responsible regions of inner table
Patent Assignee: INT BUSINESS MACHINES CORP (IBMC   )
Inventor: CHENG J; MOHAN C; PIRAHESH M H
Number of Countries: 001 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 529916	A2	19930303	EP 92307535	A	19920818	199309	B
EP 529916	A3	19931020	EP 92307535	A	19920818	199510	
US 5551031	A	19960827	US 91749088	A	19910823	199640	
			US 94325942	A	19941019		
			US 95487300	A	19950607		
US 5557791	A	19960917	US 91749088	A	19910823	199643	
			US 94325942	A	19941019		

Priority Applications (No Type Date): US 91749088 A 19910823
Cited Patents: No-SR.Pub; 3.Jnl.Ref; EP 421408
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 529916	A2	E	24	G06F-015/40	
US 5551031	A		26	G06F-017/30	Cont of application US 91749088
					Div ex application US 94325942
US 5557791	A		27	G06F-017/30	Cont of application US 91749088
EP 529916	A3			G06F-015/40	

Abstract (Basic): EP 529916 A
     The system has a device for storing tables consisting of a number
of tuples having multiple columns. An **outer   join** operation is
perferred on two such tables, one table being an inner table and the
other an outer. The outer table is ordered or indexed in a sorted
sequence on a selected set of columns.
     A device, responsive to values in the selected set of columns,
determine a number of responsibility regions in the inner table such
that every tuple in the inner table belongs to one and only one region.
The tuples of the inner table are processed in each responsibility
region by outputting all tuples which belong to the region.
     ADVANTAGE - Is capable of outputting all tuples of inner table in
output of join operation without requiring sorting of inner table.

IEEE Xplore®
RELEASE 2.1

Welcome United States Patent and Trademark Office

□ **Search Results**

BROWSE   SEARCH   IEEE XPLORE GUIDE

Results for "(outer join and (with <near/2> (command* or statement* or expression* or clause* or operator* ..."   ☑e-mail
Your search matched **6** of **1225093** documents.
A maximum of **100** results are displayed, **25** to a page, sorted by **Relevance** in **Descending** order.

» Search Options

<u>View Session History</u>

<u>New Search</u>

Modify Search

(outer join and (with <near/2> (command* or statement* or expression* or clause* or   »

☐ Check to search only within this results set

» Key

IEEE JNL	IEEE Journal or Magazine
IEE JNL	IEE Journal or Magazine
IEEE CNF	IEEE Conference Proceeding
IEE CNF	IEE Conference Proceeding
IEEE STD	IEEE Standard

Display Format: ⦿ Citation   ○ Citation & Abstract

Select   Article Information

☐   1. **Efficient processing of nested Fuzzy SQL queries in a fuzzy database**
Qi Yang; Weining Zhang; Chengwen Liu; Jing Wu; Yu, C.; Nakajima, H.; Rishe
Knowledge and Data Engineering, IEEE Transactions on
Volume 13, Issue 6, Nov.-Dec. 2001 Page(s):884 - 901
Digital Object Identifier 10.1109/69.971185

<u>AbstractPlus</u> | <u>References</u> | Full Text: <u>PDF</u>(342 KB)   **IEEE JNL**

☐   2. **Rule-based parallel query optimization for OQL using a parallelism extrac**
Mendes, S.F.; Falcone Sampaio, P.R.;
Database and Expert Systems Applications, 1998. Proceedings. Ninth Internat
on
26-28 Aug. 1998 Page(s):705 - 710
Digital Object Identifier 10.1109/DEXA.1998.707485

<u>AbstractPlus</u> | Full Text: <u>PDF</u>(56 KB)   **IEEE CNF**

☐   3. **An overview of the multi-database manipulation language MDSL**
Litwin, W.; Abdellatif, A.;
Proceedings of the IEEE
Volume 75, Issue 5, May 1987 Page(s):621 - 632

<u>AbstractPlus</u> | Full Text: <u>PDF</u>(1136 KB)   **IEEE JNL**

☐   4. **Standard for Information Technology - Portable Operating System Interfa**
and Utilities, Issue 6
IEEE Std 1003.1-2001. Shell and Utilities, Issue 6
2001 Page(s):i - 1090

<u>AbstractPlus</u> | Full Text: <u>PDF</u>(4985 KB)   **IEEE STD**

☐   5. **Optimization and evaluation of disjunctive queries**
Claussen, J.; Kemper, A.; Moerkotte, G.; Peithner, K.; Steinbrunn, M.;
Knowledge and Data Engineering, IEEE Transactions on
Volume 12, Issue 2, March-April 2000 Page(s):238 - 260
Digital Object Identifier 10.1109/69.842265

<u>AbstractPlus</u> | <u>References</u> | Full Text: <u>PDF</u>(620 KB)   **IEEE JNL**

☐   6.
Optimizer and parallel engine extensions for handling expensive method
objects
O'Connell, W.; Carino, F.; Linderman, G.;

AbstractPlus | Full Text: PDF(332 KB)   IEEE CNF

Help   Contact Us   Privacy & :

Indexed by
圓 Inspec*

P✿RTAL
THE ACM DIGITAL LIBRARY

Try the *new* Portal design

Give us your opinion after using it.

Search Results

Search Results for: **[(outer join <near/50> (with <near/2> (command* or statement* or expression* or clause* or operator* or term* or keyword* or word*)))<AND>(meta_published_date <= 06-01-2001)]**
Found **6** of **160,172 searched.**

Search within Results

[   ] GO   > Advanced Search

> Search Help/Tips

Sort by: Title   Publication   Publication Date   Score   ♥ Binder

---

Results 1 - 6 of 6   short listing

---

1 Efficient evaluation of XML middle-ware queries   98%
Mary Fernandez , Atsuyuki Morishima , Dan Suciu
ACM SIGMOD Record , Proceedings of the 2001 ACM SIGMOD international conference on Management of data May 2001
Volume 30 Issue 2

> We address the problem of efficiently constructing materialized XML views of relational databases. In our setting, the XML view is specified by a query in the declarative query language of a middle-ware system, called SilkRoute. The middle-ware system evaluates a query by sending one or more SQL queries to the target relational database, integrating the resulting tuple streams, and adding the XML tags. We focus on how to best choose the SQL queries, without having control over the target RDBM ...

2 NSF workshop on industrial/academic cooperation in database systems   96%
Mike Carey , Len Seligman
ACM SIGMOD Record March 1999
Volume 28 Issue 1

3 Query unnesting in object-oriented databases   84%
Leonidas Fegaras
ACM SIGMOD Record , Proceedings of the 1998 ACM SIGMOD international conference on Management of data June 1998
Volume 27 Issue 2

> There is already a sizable body of proposals on OODB query optimization. One of the most challenging problems in this area is query unnesting, where the embedded query can take any form, including aggregation and universal quantification. Although there is already a number of proposed techniques for query unnesting, most of these techniques are applicable to only few cases. We believe that the lack of a general and

simple solution to the query unnesting problem is due to the lack of a unifo ...

4 Outerjoin optimization in multidatabase systems   83%

Arbee L. P. Chen

Proceedings of the second international symposium on Databases in parallel and distributed systems July 1990

> Outerjoin is used in distributed relational multidatabase systems for integrating local schemas to a global schema. Queries against the global schema need to be modified, optimized, and decomposed into subqueries at local sites for processing. Since outerjoin combines local relations in different databases to form a global relation, it is expensive to process. In this paper, based on the structure of the query and the definition of the schemas, queries with outerjoin, join, select and proje ...

5 Towards an efficient evaluation of general queries: quantifier and   77%

disjunction processing revisited

Francois Bry

ACM SIGMOD Record , Proceedings of the 1989 ACM SIGMOD international conference on Management of data June 1989

Volume 18 Issue 2

> Database applications often require to evaluate queries containing quantifiers or disjunctions, e.g., for handling general integrity constraints. Existing efficient methods for processing quantifiers depart from the relational model as they rely on non-algebraic procedures. Looking at quantified query evaluation from a new angle, we propose an approach to process quantifiers that makes use of relational algebra operators only. Our approach performs in two phases. The first phase nor ...

6 Simplification of outer joins   72%

Gautam Bhargava , Piyush Goel , Balakrishna R. Iyer

Proceedings of the 1995 conference of the Centre for Advanced Studies on Collaborative research November 1995

> The removal of redundant outer joins is essential for the reassociation of outer joins with other binary operations. In this paper, we present a set of comprehensive algorithms that employ the properties of strong predicates along with the properties of SQL's projection, intersection, union and except operations in order to remove redundant outer joins from a complex query. For the purpose of query simplification, we generate additional projections by determining the keys. Our algorithm for gene ...

Results 1 - 6 of 6   short listing

Refine Search

Search Results -

Terms	Documents
outer adj join	5

Database:
```
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins
```

Search:
```
L1 and "with"
```
[Refine Search]

[Recall Text] [Clear] [Interrupt]

Search History

DATE: Wednesday, August 17, 2005   Printable Copy   Create Case

Set Name	Query	Hit Count	Set Name
side by side			result set
	DB=TDBD; PLUR=YES; OP=OR		
L1	outer adj join	5	L1

END OF SEARCH HISTORY

Hit List

Search Results - Record(s) 1 through 5 of 5 returned.

☐ 1. Document ID: NA9109340

L1: Entry 1 of 5   File: TDBD   Sep 1, 1991

TDB-ACC-NO: NA9109340

DISCLOSURE TITLE: Implementations of Extended Relational Operations.

PUBLICATION-DATA:
IBM Technical Disclosure Bulletin, September 1991, US

VOLUME NUMBER: 34
ISSUE NUMBER: 4A
PAGE NUMBER: 340 - 354

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

☐ 2. Document ID: NA9109331

L1: Entry 2 of 5   File: TDBD   Sep 1, 1991

TDB-ACC-NO: NA9109331

DISCLOSURE TITLE: Handling the Nulls Generated by Extended Relational Operations.

PUBLICATION-DATA:
IBM Technical Disclosure Bulletin, September 1991, US

VOLUME NUMBER: 34
ISSUE NUMBER: 4A
PAGE NUMBER: 331 - 339

☐ 3. Document ID: NN9005253

L1: Entry 3 of 5   File: TDBD   May 1, 1990

TDB-ACC-NO: NN9005253

DISCLOSURE TITLE: Integrated Buffer Management And Query Optimization Strategy For Relational Databases.

PUBLICATION-DATA:
IBM Technical Disclosure Bulletin, May 1990, US

VOLUME NUMBER: 32
ISSUE NUMBER: 12
PAGE NUMBER: 253 - 257

☐ 4. Document ID: NA8909306

L1: Entry 4 of 5   File: TDBD   Sep 1, 1989

TDB-ACC-NO: NA8909306

DISCLOSURE TITLE: Integrated Site ASSIGNMENT for Relations and Join Operations in Distributed Transaction Processing

PUBLICATION-DATA:
IBM Technical Disclosure Bulletin, September 1989, US

VOLUME NUMBER: 32
ISSUE NUMBER: 4A
PAGE NUMBER: 306 - 314

□ 5.   Document ID: NN8806219

L1: Entry 5 of 5   File: TDBD   Jun 1, 1988

TDB-ACC-NO: NN8806219

DISCLOSURE TITLE: Relational Assignments for Distributed Database Systems

PUBLICATION-DATA:
IBM Technical Disclosure Bulletin, June 1988, US

VOLUME NUMBER: 31
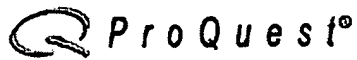ISSUE NUMBER: 1
PAGE NUMBER: 219 - 225

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw C |

| Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS |

Terms	Documents
outer adj join	5

Display Format: CIT | Change Format |

Previous Page   Next Page   Go to Doc#

ProQuest®

| Basic | Advanced | Topics | Publications | My Research 0 marked items |

Interface language:
English ▼

Databases selected: Multiple databases...   What's new

Searching for *outer join and (with command or with clause or with statement or clause with or command with or statement with)* did not find any documents. Try the following:

Revise your search below using the following tips:

- Check your spelling.
- Reduce the number of terms included in your search.
- Broaden your search by selecting other databases, removing limits, or searching "Citations and Document Text" (if available).
- Use "AND" to connect two words that don't need to be searched as a phrase.
- Connect similar terms with the "OR" operator (e.g. military OR pentagon). See Search Tips for more hints.

Basic Search

Tools: Search Tips   Browse Topics   4 Recent Searches

| outer join and (with command or with clause or with statement or clause with | Search   Clear

Database: | Multiple databases...   ▼ | Select multiple databases

Date range: | All dates   ▼ |

Limit results to: ☐ Full text documents only 📄

☐ Scholarly journals, including peer-reviewed 🎓 About

More Search Options

Text-only interface

Pro**Quest**
COMPANY